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Edgar Haber  
Thomas Hoffman  
Steven M. Larson  
Stanley E. Order  
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- \*1857 Association of Rare Alleles of the Harvey *ras* Protooncogene Locus with Lung Cancer. Haruhiko Sugimura, Neil E. Caporaso, Rama V. Modali, Robert N. Hoover, James H. Resau, Benjamin F. Trump, Joyce A. Lonergan, Theodore G. Krontiris, Dean L. Mann, Ainsley Weston, and Curtis C. Harris.

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- \*1867 Growth Inhibition of Human Melanoma Tumor Xenografts in Athymic Nude Mice by Swainsonine. James W. Dennis, Kay Koch, Shida Yousefi, and Ingrid VanderElst.

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- \*1886 Marital Status and the Incidence of Sarcomas of the Uterus. Stephen M. Schwartz and Noel S. Weiss.

- \*1890 Suppression of Tumorigenicity of a Human Lung Carcinoma Line by Nontumorigenic Bronchial Epithelial Cells in Somite Cell Hybrids. M. Edward Kaighn, Edward W. Gabrielson, Deborah S. Iman, Elsa A. Pauls, and Curtis C. Harris.

- \*1897 Rapid Degradation of Extracellular Matrix Proteins by Normal Human Uroepithelial Cells. Lynn E. Allen, Louis Dubois, Ofelia Alvarez, and Peter A. Jones.

- \*1905 Effects of Microinjected Photoreactivating Enzyme on Thymine Dimer Removal and DNA Repair Synthesis in Normal Human and Xeroderma Pigmentosum Fibroblasts. Len Roza, Wim Vermeulen, Jacqueline B. A. Bergen Henegouwen, André P. M. Eker, Nicolaas G. J. Jaspers, Paul H. M. Lohman, and Jan H. J. Hoogjmakers.

- 1911 Enzyme-altered Foci in Colons of Carcinogen-treated Rats. Betty J. Barrow, Mary Ann O'Riordan, Thomas A. Stellato, Beverly M. Calkins, and Theresa P. Prettow.

- 1917 Multistage Progression of Alveolar Virus-infected Murine Pre-B-Cells in the Tumorigenic State. Gregory J. Palumbo, Brad W. Oramne, and John R. Kettman.

- 1924 Use of Seal Neurons in Developing Quantitative Ultrastructural Parameters for Neurotoxic Side Effects of *Vibrio* Antitumor Agents. Linda J. Muller, Curry M. Moore-van Dell, Rokas Ziji, and Eric W. Roubos.

- 1929 Morphological Evidence for an Apparent Lysosomotropic Activity by Unsaturated Putrescine Analogues. Curt W. Porter, J. Stanek, J. Black, M. Vaughan, B. Ganis, and A. Pleshkevych.

- \*1936 Photosensitization of Human Leukemic Cells by Anthracenequinone Antitumor Agents. John A. Hartley, Stephen M. Forrow, Robert L. Souhami, Krzysztof Reszka, and J. William Lown.

- 1941 Phenotypic Expression in Spontaneously Transformed Cultured Rat Liver Epithelial Cells. Ming-Sound Tsao, Jessica Shepherd, and Gerald Battist.

- 1948 A Monoclonal Antibody to Lewis Lung Carcinoma Variant H-59 Identifies a Plasma Membrane Protein with Apparent Relevance to Lymph Node Adhesion and Metastasis. William Shostakovskiy, Lucia Fallavollita, and Prina Brodt.

- \*1954 Activity of Intrathecal 4-Hydroperoxycyclophosphamide in a Nude Rat Model of Human Neoplastic Meningitis. Herbert E. Fuchs, Gerald E. Archer, O. Michael Colvin, Sandra H. Bigner, James M. Schuster, Gregory N. Fuller, Lawrence H. Mulholland, S. Clifford Schold, Jr., Henry S. Friedman, and Dorell D. Bigner.

- 1960 Pathobiology of Lung Tumors Induced in Hamsters by 4-(Methylthio)nitro-1-(3-pyridyl)-1-butanone and the Modulating Effect of Hyperoxia. Hildegarde M. Schuller, Hans-Peter Witschi, Eric Nylen, Priyavadan A. Joshi, Enrique Correa, and Kenneth L. Becker.

- \*1966 Paracrine Stimulation of Polarized Secretion from Monolayers of a Neoplastic Prostatic Epithelial Cell Line by Prostatic Stromal Cell Proteins. Daniel Djakiew, Mary A. Tarkington, and John H. Lynch.

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- \*1983 Expression of Alternatively Terminated Unusual Human Butyrylcholinesterase Messenger RNA Transcripts, Mapping to Chromosome 3q26-ter, in Nervous System Tumors. Averell Gnat, Catherine A. Prody, Nori Zomor, Judith Lieman-Hurwitz, Haim Zakut, and Hermona Soreq.
- \*1988 Ratios between the Abundance of Messenger RNA and the Corresponding Protein of Two Growth-related Genes, *c-myc* and *Vimentin*, in Leukemic Blast Cells. Sergio Ferrari, Enrico Tagliacof, Marco D'Inci, Giovanni Ceccherelli, Rossella Manfredini, Licia Sella, Amedeo Donelli, Stefano Sacchi, Giuseppe Torelli, and Umberto Torelli.
- 1992 Correlation of Enhanced 6-Mercaptopurine Cytotoxicity with Increased Phosphoribosyltransferase Levels in Chinese Hamster Ovary Cells Treated with 3-Aminobenzamide. Kevin Moses, Elaine Willmore, Adrian L. Harris, and Barbara W. Durkacz.
- \*1997 Retinoid Modulation of Extracellular Matrix Growth and of Protein Synthesis and Secretion in Human Breast Carcinoma Cells. Joseph A. Fontana, Alicia Burrows Mezu, Brenda N. Cooper, and Dante Miranda.
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- \*2009 Pharmacokinetics of Recombinant Interleukin 2 in Humans. Michael W. Konrad, George Hemstreet, Evan M. Hersh, Peter W. A. Mansell, Roland Merkle, Jonathan E. Kolitz, and Edward C. Bradley.
- 2018 Potentiation of Invasive Capacity of Rat Ascites Hepatoma Cells by Adriamycin. Fumio Imamura, Takeshi Hori, Mutsuko Mukai, Kiyoko Shinkai, and Hirotoshi Akedo.
- \*2022 Expression of Chromosomal Protein HMG-14 and HMG-17 in Transformed Human Cells. Massimo P. Crippa, James M. Pash, Brenda I. Gerwin, Thomas E. Smithgall, Robert I. Glazer, and Michael Bustin.
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## Cover Illustrations for Volume 50

January 1: Alfred G. Knudson, Jr., Henry C. Pitot, and Ernst L. Wynder, recipients of American Cancer Society awards for their contributions to cancer research.

January 15: J. Michael Bishop and Harold E. Varmus, winners of the 1989 Nobel Prize for Physiology or Medicine.

February 1: Ramesh C. Gupta, Erika Randerath, Kurt Randerath, and M. V. Reddy, and a diagram of the <sup>32</sup>P postlabeling technique.

February 15: Janardan K. Reddy, M. Sambasiva Rao, and electron micrographs of normal rat liver and hepatocyte showing peroxisome proliferation.

March 1: William Weiss, W. G. Figueroa, Benjamin L. Van Duuren, H. Sakabe, Alfred M. Thiess, Sidney Laskin, Marvin Kuschner, and Robert T. Drew, investigators of bis(chloromethyl) ether (BCME).

March 15: James A. Miller, Elizabeth C. Miller, Allan H. Conney, Herbert K. Remmer, and Ryuichi Kato, and illustrations of 3-methylcholanthrene-induced azo dye N-demethylase and reductase and of the substrate-induced benzo(a)pyrene metabolism.

April 1: Jan Waldenström, a pioneer investigator in neoplasia of the immune system and discoverer of Waldenström's macroglobulinemia.

April 15: St. Jude Children's Research Hospital, Danny Thomas, and a hospital patient.

May 1: Carlo Croce, Ronald M. Evans, Erkki Ruoslahti, Hartmann Stahelin, and Anthony von Wartburg, winners of the 1990 awards of the American Association for Cancer Research.

May 15: Ross McIntyre, Edwin Mirand, Albert Owens, and Sydney Salmon, officers of the American Association of Cancer Institutes.

June 1: Margaret Foti, Executive Director of the American Association for Cancer Research and Managing Editor of its official publication, *Cancer Research*.

June 15: Joseph G. Fortner, President of the General Motors Cancer Research Foundation, and Roger B. Smith, Chief Executive Officer and Chairman of the Board of General Motors.

July 1: Arnold Graffi, founder of the Cancer Institute in Berlin-Buch, Germany.

July 15: Annerose Anders, Fritz Anders, Myron Gordon, and Curt Kosswig, and photos of the swordfish and platyfish and hybrids with melanomas and of genetically controlled features in backcross fishes.

August 1: Bert Vogelstein, winner of the 1990 Bristol-Myers Squibb Award.



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September 1: Webster K. Cavenee, Sir David Cox, Mark S. Ptashne, Raymond L. White, winners of the 1990 General Motors Cancer Research Foundation awards.

September 15: Children's Hospital of Philadelphia, Giulio D'Angio, a hospital patient, and Audrey Evans.

October 1: Charles R. Ebersol, Sandor Eckhardt, G. P. Murphy, and C. G. Schmidt, officers of the International Union Against Cancer (UICC).

October 15: McArdle Laboratory, Michael McArdle, and Harold P. Rusch.

November 1: Sandor Eckhardt and the National Institute of Oncology, Budapest, Hungary.

November 15: Vincent T. DeVita, Jr., and Emil Frei III, winners of the 1989 Armand Hammer Foundation award.

December 1: Paul Kleihues, Tomas Lindahl, Anthony E. Pegg, and Manfred F. Rajewsky, researchers in *O*<sup>6</sup>-methyltransferase.

December 15: Harris Busch, 1989-1990 President of the American Association for Cancer Research.



